LANCOM ISG-8000

Central-site security for large SD-WAN scenarios

A key aspect for very large-scale multi-service IP networks is performance and reliability at the central site. At the heart of your SD-WAN, the LANCOM ISG-8000 multi-Gigabit gateway provides security and high performance. A powerful platform with state-of-the-art encryption technologies, high-scalability VPN and extensive redundancy features delivers a Software-Defined Wide Area Network (SD-WAN) that greatly simplifies your work in administration. It networks numerous locations, branches and external employees by means of the LANCOM Management Cloud. You can also upgrade this integrated services gateway with additional features such as a hotspot, clustering, or up to 3,000 VPN channels.

> Central multi-Gigabit gateway for SD-WAN
> 250 concurrent IPSec VPN connections (3,000 optional)
> Support for up to 4096 VLANs / 256 ARF contexts
> SD-WAN support with High Scalability VPN (HSVPN)
> 2x 10G SFP+ ports, 8x GE-ETH ports, RJ45 config port
> Optional expansion slot for additional interfaces
> Powerful SD-WAN for large-scale, distributed network infrastructures in conjunction with the LANCOM Management Cloud
> Optionally upgradeable with hotspot, content filtering or clustering features

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Secure site connectivity for large-scale SD-WAN enterprise scenarios

The LANCOM ISG-8000 is the central instance for your high-performance SD-WAN in large enterprise infrastructures. 250 integrated VPN channels based on state-of-the-art encryption technologies and demand-oriented ports (2x 10 Gigabit SFP+, 8x Gigabit Ethernet and 2x USB) deliver the best possible conditions for networking mobile employees, protecting internal company data, and taking high-performance IPSec connectivity to sensitive network segments or branches. The LANCOM VPN option upgrades the gateway to support up to 3,000 VPN channels. This ensures that your network is perfectly scalable and can grow on demand—without needing additional hardware.

Powerful SD-WAN greatly simplifies the management of enterprise structures

In combination with the LANCOM Management Cloud, the LANCOM ISG-8000 provides the ideal basis for establishing a high-performance SD-WAN. For instance, it enables the highly automated configuration of a wide area network and an automatic rollout of device configurations to your individual locations. You benefit from highest levels of scalability, save on personnel costs, and keep track of the status of your network 24/7—ideal for large and complex enterprise scenarios with multiple locations.

Next-generation SD-WAN: High Scalability VPN (HSVPN)

The LANCOM ISG-8000 supports High Scalability VPN (HSVPN). The ongoing rise of digitalization, greater diversity of applications, and higher data volumes demand powerful, state-of-the-art networks. High Scalability VPN significantly improves the extensibility and efficiency of your architecture. Where previously each individual application required a separate VPN tunnel, HSVPN bundles any number of networks into a single VPN tunnel and transports them collectively to the remote site—with each network remaining secure and strictly separated from the others. The advantage for your business: Considerably fewer VPN tunnels are required, and recovery times are much faster in a failover event.

Maximum port versatility

From fiber-optic to Ethernet and USB ports: At the heart of the network, this integrated services gateway with 8x Gigabit Ethernet ports and 2x USB enables a variety of applications. 2x 10 Gigabit SFP+ ports also increase the capacity of your data transfers to servers, network storage or switches. An expansion slot enables the retrofitting of additional ports.

Integrated display for maximum network control

The LANCOM ISG-8000 comes in a high-quality all-metal housing with 2 redundant power supply units. The mounting system allows installation in 19 inch racks, and front-mounted connection ports make it quick and easy to work with. The display on the front of the device provides a continuous overview of various information including the temperature, CPU load, and the active VPN tunnels. You can see in an instant if your network is operating properly or if you need to act.

Security Made in Germany

Development of the software and hardware at LANCOM Systems, as well as the manufacturing, are predominantly based in Germany, as is the network-management hosting. There is a strong focus on trustworthiness and security. The company is committed to products that are free from backdoors and is a holder of the quality seal "IT Security Made in Germany" as initiated by the German Ministry of Economics.

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LANCOM ISG-8000 LCOS 10.40

Layer 2 features	
VLAN	4.096 IDs based on IEEE 802.1q, dynamic assignment, Q-in-Q tagging
Multicast	IGMP-Snooping
Protocols	Ethernet over GRE-Tunnel (EoGRE), L2TPv3, ARP-Lookup, LLDP, DHCP option 82, IPv6-Router-Advertisement-Snooping, DHCPv6-Snooping, LDRA (Lightweight DHCPv6 Relay Agent), Spanning Tree, Rapid Spanning Tree, ARP, Proxy ARP, BOOTP, DHCP, LACP

Layer 3 features	
Firewall	Stateful inspection firewall including paket filtering, extended port forwarding, N:N IP address mapping, paket tagging, support for DNS targets, user-defined rules and notifications
Quality of Service	Traffic shaping, bandwidth reservation, DiffServ/TOS, packetsize control, layer-2-in-layer-3 tagging
Security	Intrusion Prevention, IP spoofing, access control lists, Denial of Service protection, detailed settings for handling reassembly, session-recovery, PING, stealth mode and AUTH port, URL blocker, password protection, programmable reset button
PPP authentication mechanisms	PAP, CHAP, MS-CHAP, and MS-CHAPv2
High availability / redundancy	VRRP (Virtual Router Redundancy Protocol)
Router	IPv4-, IPv6-, NetBIOS/IP multiprotokoll router, IPv4/IPv6 dual stack
SD-WAN Application Routing	SD-WAN Application Routing in connection with the LANCOM Management Cloud
Router virtualization	ARF (Advanced Routing and Forwarding) up to separate processing of 256 contexts
IPv4 services	HTTP and HTTPS server for configuration by web interface, DNS client, DNS server, DNS relay, DNS proxy, dynamic DNS client, DHCP client, DHCP relay and DHCP server including autodetection, NetBIOS/IP proxy, NTP client, SNTP server, policy-based routing, Bonjour-Proxy, RADIUS
IPv6 services	HTTP and HTTPS server for configuration by web interface, DHCPv6 client, DHCPv6 server, DHCPv6 relay, DNS client, DNS server, dynamic DNS client, NTP client, SNTP server, Bonjour-Proxy, RADIUS
Dynamic routing protocols	RIPv2, BGPv4, OSPFv2, LISP (Locator/ID Separation Protocol)
IPv4 protocols	DNS, HTTP, HTTPS, ICMP, NTP/SNTP, NetBIOS, PPPoE (server), RADIUS, RADSEC (secure RADIUS), RTP, SNMPv1,v2c,v3, TFTP, TACACS+
IPv6 protocols	NDP, stateless address autoconfiguration (SLAAC), stateful address autoconfiguration (DHCPv6), router advertisements, ICMPv6, DHCPv6, DNS, HTTP, HTTPS, PPPoE, RADIUS, SMTP, NTP, BGP, LISP, Syslog, SNMPv1,v2c,v3
WAN operating mode	VDSL, ADSL1, ADSL2 or ADSL2+ additional with external DSL modem at an ETH port
WAN protocols	PPPoE, Multi-PPPoE, ML-PPP, GRE, EoGRE, PPTP (PAC or PNS), L2TPv2 (LAC or LNS), L2TPv3 with Ethernet-Pseudowire and IPoE (using DHCP or no DHCP), RIP-1, RIP-2, VLAN, IPv6 over PPP (IPv6 and IPv4/IPv6 dual stack session), IP(v6)oE (autokonfiguration, DHCPv6 or static)
Tunneling protocols (IPv4/IPv6)	6to4, 6in4, 6rd (static and over DHCP), Dual Stack Lite (IPv4-in-IPv6-Tunnel)

Security	
Intrusion Prevention	Monitoring and blocking of login attempts and port scans
IP spoofing	Source IP address check on all interfaces: only IP addresses belonging to the defined IP networks are allowed
Access control lists	Filtering of IP or MAC addresses and preset protocols for configuration access
Denial of Service protection	Protection from fragmentation errors and SYN flooding
General	Detailed settings for handling reassembly, PING, stealth mode and AUTH port
URL blocker	Filtering of unwanted URLs based on DNS hitlists and wildcard filters. Extended functionality with Content Filter Option
Password protection	Password-protected configuration access can be set for each interface
Alerts	Alerts via e-mail, SNMP traps and SYSLOG
Authentication mechanisms	PAP, CHAP, MS-CHAP and MS-CHAPv2 as PPP authentication mechanism
Adjustable reset button	Adjustable reset button for 'ignore', 'boot-only' and 'reset-or-boot'

High availability / redundancy	
VRRP	VRRP (Virtual Router Redundancy Protocol) for backup in case of failure of a device or remote station.
FirmSafe	For completely safe software upgrades thanks to two stored firmware versions, incl. test mode for firmware updates

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High availability / redundancy	
Load balancing	Static and dynamic load balancing over up to 4 WAN connections (incl. client binding). Channel bundling with Multilink PPP (if supported by network operator)
VPN redundancy	Backup of VPN connections across different hierarchy levels, e.g. in case of failure of a central VPN concentrator and re-routing to multiple distributed remote sites. Any number of VPN remote sites can be defined (the tunnel limit applies only to active connections). Up to 32 alternative remote stations, each with its own routing tag, can be defined per VPN connection. Automatic selection may be sequential, or dependant on the last connection, or random (VPN load balancing)
Line monitoring	Line monitoring with LCP echo monitoring, dead-peer detection and up to 4 addresses for end-to-end monitoring with ICMP polling

VPN	
IPSec over HTTPS	Enables IPsec VPN based on TCP (at port 443 like HTTPS) which can go through firewalls in networks where e. g. port 500 for IKE is blocked. Suitable for client-to-site connections and site-to-site connections. IPSec over HTTPS is based on the NCP VPN Path Finder technology
Number of VPN tunnels	Max. number of concurrent active IPSec, PPTP (MPPE) and L2TPv2 tunnels: 250 (up to 3000 with VPN +250 Option). Unlimited configurable connections. Configuration of all remote sites via one configuration entry when using the RAS user template or Proadaptive VPN.
Hardware accelerator	Integrated hardware accelerator for 3DES/AES encryption and decryption
1-Click-VPN Client assistant	One click function in LANconfig to create VPN client connections, incl. automatic profile creation for the LANCOM Advanced VPN Client
1-Click-VPN Site-to-Site	Creation of VPN connections between LANCOM routers via drag and drop in LANconfig
IKE, IKEv2	IPSec key exchange with Preshared Key or certificate (RSA signature, digital signature)
Smart Certificate	Convenient generation of digital X.509 certificates via an own certifation authority (SCEP-CA) on the webpage or via SCEP.
Certificates	X.509 digital multi-level certificate support, compatible with Microsoft Server / Enterprise Server and OpenSSL. Secure Key Storage protects a private key (PKCS#12) from theft.
Certificate rollout	Automatic creation, rollout and renewal of certificates via SCEP (Simple Certificate Enrollment Protocol) per certificate hierarchy
Certificate revocation lists (CRL)	CRL retrieval via HTTP per certificate hierarchy
OCSP Client	Check X.509 certifications by using OCSP (Online Certificate Status Protocol) in real time as an alternative to CRLs
OCSP Server / Responder	Offers validity information for certificates created with Smart Certificate via OCSP
XAUTH	XAUTH client for registering LANCOM routers and access points at XAUTH servers incl. IKE-config mode. XAUTH server enables clients to register via XAUTH at LANCOM routers. Connection of the XAUTH server to RADIUS servers provides the central authentication of VPN-access with user name and password. Authentication of VPN-client access via XAUTH and RADIUS connection additionally by OTP token
RAS user template	Configuration of all VPN client connections in IKE ConfigMode via a single configuration entry
Proadaptive VPN	Automated configuration and dynamic creation of all necessary VPN and routing entries based on a default entry for site-to-site connections. Propagation of dynamically learned routes via RIPv2 if required
Algorithms	3DES (168 bit), AES-CBC and -GCM (128, 192 or 256 bit), Blowfish (128 bit), RSA (1024-4096 bit), ECDSA (P-256-, P-384-, P-521-curves) and CAST (128 bit). OpenSSL implementation with FIPS-140 certified algorithms. MD-5, SHA-1, SHA-256, SHA-384 or SHA-512 hashes
NAT-Traversal	NAT-Traversal (NAT-T) support for VPN over routes without VPN passthrough
LANCOM Dynamic VPN	Enables VPN connections from or to dynamic IP addresses. The IP address is communicated via the ICMP or UDP protocol in encrypted form. Dynamic dial-in for remote sites via connection template
Dynamic DNS	Enables the registration of IP addresses with a Dynamic DNS provider in the case that fixed IP addresses are not used for the VPN connection
Specific DNS forwarding	DNS forwarding according to DNS domain, e.g. internal names are translated by proprietary DNS servers in the VPN. External names are translated by Internet DNS servers
Split DNS	Allows the selective forwarding of traffic for IKEv2 depending on the addressed DNS domain.
IPv4 VPN	Connecting private IPv4 networks
IPv4 VPN over IPv6 WAN	Use of IPv4 VPN over IPv6 WAN connections
IPv6 VPN	Connecting private IPv6 networks
IPv6 VPN over IPv4 WAN	Use of IPv6 VPN over IPv4 WAN connections

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VPN	
Radius	RADIUS authorization and accounting, outsourcing of VPN configurations in external RADIUS server in IKEv2, RADIUS CoA (Change of Authorization)

Interfaces	
Ethernet ports	8 ETH ports (10/100/1000 Mbps), and two SFP+ ports (10 GBit/s); up to 4 ports can be operated as additional WAN ports with load balancing.
Port configuration	Each Ethernet port can be freely configured (LAN, DMZ, WAN, monitor port, off). Additionally, external DSL modems or termination routers can be operated as a WAN port with load balancing and policy-based routing.
USB 2.0 host port	2x USB 2.0 hi-speed host port for connecting USB printers (USB print server), serial devices (COM port server), USB data storage (FAT file system); bi-directional data exchange is possible
Serial interface	Serial configuration interface / COM port (RJ-45): 9,600 - 115,000 baud.

Management and monitoring	
Management	LANCOM Management Cloud, LANconfig, WEBconfig, LANCOM Layer 2 management (emergency management)
Management functions	Alternative boot configuration, voluntary automatic updates for LCMS and LCOS, individual access and function rights up to 16 administrators, RADIUS and RADSEC user management, remote access (WAN or (W)LAN), access rights (read/write) adjustable seperately), SSL, SSH, HTTPS, Telnet, TFTP, SNMP, HTTP, access rights via TACACS+, scripting, timed control of all parameters and actions through cron job
FirmSafe	Two stored firmware versions, incl. test mode for firmware updates
automatic firmware update	configurable automatic checking and installation of firmware updates
Monitoring	LANCOM Management Cloud, LANmonitor, WLANmonitor
Monitoring functions	Device SYSLOG, SNMPv1,v2c,v3 incl. SNMP-TRAPS, extensive LOG and TRACE options, PING and TRACEROUTE for checking connections, internal logging buffer for firewall events
Monitoring statistics	Extensive Ethernet, IP and DNS statistics; SYSLOG error counter, accounting information exportable via LANmonitor and SYSLOG, Layer 7 Application Detection including application-centric tracking of traffic volume
IPerf	IPerf is a tool for measurements of the bandwidth on IP networks (integrated client and server)
SLA-Monitor (ICMP)	Performance monitoring of connections
SD-LAN	SD-LAN — automatic LAN configuration via the LANCOM Management Cloud
SD-WAN	SD-WAN — automatic WAN configuration via the LANCOM Management Cloud

Hardware	
Weight	15 kg
Power supply	2x redundant, hot swappable power supply units (90–264 V, 47-63 Hz)
Environment	Temperature range 0–40° C (operation), -20-70° C (storage); humidity 5–90% (operation), 5-95% (storage); non-condensing
Housing	Robust metal housing, 19" 1 HU (438 x 44 x 525 mm, W x H x D), with removable mounting brackets, network connectors on the front
Fans	3x + 2x PSU
Power consumption (max)	300 watt

Declarations of conformity*	
CE	EN 60950-1, EN 55022, EN 55024
FCC	FCC Part 15, Class B with FTP cabling
UL	UL-2043
IPv6	IPv6 Ready Gold
*) Note	You will find all declarations of conformity in the products section of our website at www.lancom-systems.com

Scope of delivery	
Manual	Hardware Quick Reference (DE/EN), Installation Guide (DE/EN)
Cable	Serial configuration cable, 1.5m
Cable	2 Ethernet cables, 3m

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Scope of delivery	
Cable	EU version: 2x IEC power cord, WW version: country-specific IEC power cords are separately available

Support	
Warranty	3 years support
Software updates	Regular free updates (LCOS operating system and LANtools) via Internet

Options	
VPN	LANCOM VPN +250 Option (250 additional channels), item no. 61406
LANCOM Warranty Basic Option XL	Option to extend the manufacturer´s warranty from 3 to 5 years, item no. 10713
LANCOM Warranty Advanced Option XL	Option to extend the manufacturer´s warranty from 3 to 5 years and replacement of a defective device, item no. 10718

LANCOM Management Cloud	
LANCOM LMC-D-1Y LMC License	LANCOM LMC-D-1Y License (1 Year), enables the management of one category D device for one year via the LANCOM Management Cloud, item no. 50109
LANCOM LMC-D-3Y LMC License	LANCOM LMC-D-3Y License (3 Years), enables the management of one category D device for three years via the LANCOM Management Cloud, item no. 50110
LANCOM LMC-D-5Y LMC License	LANCOM LMC-D-5Y License (5 Years), enables the management of one category D device for five years via the LANCOM Management Cloud, item no. 50111

Accessories	
1000Base-SX SFP module	LANCOM SFP-SX-LC1, item no. 61556
1000Base-LX SFP module	LANCOM SFP-LX-LC1, item no. 61557
10GBASE-SR/SW SFP module	LANCOM SFP-SX-LC10, item no. 61485
10GBASE-LR/LW SFP module	LANCOM SFP-LX-LC10, item no. 61497
Direct attach cable	LANCOM SFP-DAC10, item no. 61495
SFP copper module	LANCOM SFP-CO1, item no. 61494
VPN Client Software	LANCOM Advanced VPN Client for Windows 7, Windows 8, Windows 8.1, Windows 10, single license, item no. 61600
VPN Client Software	LANCOM Advanced VPN Client for Windows 7, Windows 8, Windows 8.1, Windows 10, 10 licenses, item no. 61601
VPN Client Software	LANCOM Advanced VPN Client for Windows 7, Windows 8, Windows 8.1, Windows 10, 25 licenses, item no. 61602
VPN Client Software	LANCOM Advanced VPN Client for Mac OS X (10.5 Intel only, 10.6 or higher), single license, item no. 61606
VPN Client Software	LANCOM Advanced VPN Client for Mac OS X (10.5 Intel only, 10.6 or higher), 10 licenses, item no. 61607
LANCOM Power Cord (UK)	IEC power cord, UK plug, item no. 61650
LANCOM Power Cord (US)	IEC power cord, US plug, item no. 61651
LANCOM Power Cord (CH)	IEC power cord, CH plug, item no. 61652
LANCOM Power Cord (AU)	IEC power cord, AU plug, item no. 61653

Item number(s)	
LANCOM ISG-8000 (EU)	61077

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